Name:

at1113exam: Expand, factor, and solve quadratics (v308)

1. Expand the following expression into standard form.

$$(4x + 3)^2$$

$16x^2 + 12x + 12x + 9$

$16x^2 + 24x + 9$

2. Expand the following expression into standard form.

$$(7x - 2)(9x - 4)$$

$63x^2 - 28x - 18x + 8$

$63x^2 - 46x + 8$

3. Solve the equation.

$$(8x - 3)(7x - 9) = 0$$

$x = \frac{3}{8}$ $x = \frac{9}{7}$

4. Expand the following expression into standard form.

$$(3x + 8)(3x - 8)$$

$9x^2 - 24x + 24x - 64$

$9x^2 - 64$

5. Factor the expression.

$$x^2 - 2x - 35$$

$$(x-7)(x+5)$$

6. Solve the equation.

$$9x^2 + 34x + 17 \;=\; 2x^2 + 3x + 5$$

$$7x^2 + 31x + 12 = 0$$
$$(7x+3)(x+4) = 0$$
$$x = \frac{-3}{7} \qquad x = -4$$

7. Solve the equation with factoring by grouping.

$$18x^2 + 15x + 24x + 20 \;=\; 0$$

$$(3x+4)(6x+5) = 0$$
$$x = \frac{-4}{3} \qquad x = \frac{-5}{6}$$

8. Factor the expression.

$$16x^2 - 81$$

$$(4x-9)(4x+9)$$